

Request for Information

**M-495 Commuter Fast Ferry Operations
Passenger & Light Freight Service
National Capital Region**

October 21, 2019





The Potomac Rappahannock Transportation Commission (PRTC)/OmniRide is publishing this Request for Information on behalf of the Northern Virginia Regional Commission's Fast Ferry Stakeholder Group to inform efforts to establish M-495 Commuter Fast Ferry Service on the Occoquan, Potomac, and Anacostia River system.

The Fast Ferry Stakeholder Group is comprised of leadership from 40 organizations – public, private, and military sector representatives – that share the vision of providing an integrated transit service on the National Capital Region's underutilized "blue" highway. Over the last decade, the Stakeholder Group has issued studies on critical elements of launching fast ferry, including market feasibility, route proving exercises and infrastructure gap analysis. Now, with a defined market and demonstrated feasibility, the group seeks to gain a greater understanding of operators' abilities and strategic outlook on launching a sustainable commuter ferry system in the Washington, DC region.

We appreciate your willingness to respond to this Request for Information. Your response will ensure that the group's next steps, to include solidifying a business plan and governance structure, reflect industry input and capabilities.

Responses Due

DATE: December 13, 2019

TIME: 5:00 PM EST

SUBMIT TO: Chuck Steigerwald
Director of Strategic Planning
PRTC
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Write "M-495 Fast Ferry" on the subject line of any communications.

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I. Purpose

The Potomac and Rappahannock Transportation Commission (PRTC), on behalf of the M-495 Commuter Fast Ferry Stakeholder Group administered by the Northern Virginia Regional Commission (NVRC), is requesting information from ferry service owner/operators and other industry representatives regarding the operation of proposed commuter passenger ferry service from Woodbridge, Virginia to Joint Base Anacostia Bolling (JBAB) and the Department of Homeland Security (DHS) (Primary Route) and other destinations (e.g., Amazon HQ2, National Airport, The Wharf, Old Town Alexandria, etc., as additional routes).

Service will run along the Occoquan, Potomac, and Anacostia Rivers - designated as the "M-495 Marine Highway" by the U.S. Maritime Administration (MARAD). The ferry service operation is intended to meet the needs of the commuter market, particularly during the AM and PM rush hours; providing consistent/reliable service, operating schedules based on destination employment hours and vessel amenities to include free WIFI and concessions. Fares are expected to be competitive with existing transit costs, including the Virginia Railway Express and the High Occupancy Toll (HOT) lanes operated by TransUrban, relative to time savings.

Operators, and other industry representatives, are strongly encouraged to include plans for market-driven expansion plans in the region, including the establishment of additional routes along M-495 (beyond the route as identified below) and recommendations for providing off-peak and night and weekend excursions to points of interest in Northern Virginia, Maryland and Washington, D.C., which include National Harbor/MGM Hotel, Georgetown, The Wharf and Old Town Alexandria.

Respondents are also asked to address the feasibility for small package freight deliveries in the region on behalf of companies like Federal Express, DHL, UPS, USPS, and Amazon. Given the significant population densities and recent efforts to provide customers with real-time package deliveries, this service has the potential to serve as an additional revenue stream.

The Stakeholder Group is in the middle of ongoing discussions about possible governance structures required to launch this service. Among the models being considered is having Potomac and Rappahannock Transportation Commission (PRTC), doing business as OmniRide, acting in this role. OmniRide is a multi-modal, multi-jurisdictional agency comprised of local and state elected officials, providing transit and TDM services to the residents of Prince William and Stafford Counties, and the Cities of Manassas and Manassas Park.

OmniRide provides bus service for more than 2 million passengers annually and is also part owner of the Virginia Railway Express (VRE), providing commuter rail service for 19,000 riders daily. PRTC receives federal, state, regional and local funding and works with those partners to focus on multimodal solutions to the transportation needs of a rapidly growing region.

This RFI is expected to inform a Request for Proposal.

II. Objectives

a. Establish a Commuter Passenger Ferry Service

Since 2009, the Stakeholder Group has sponsored and overseen several study efforts to determine the technical and financial feasibility of commuter ferry service along the Occoquan, Potomac, and Anacostia River system. Among the studies is a comprehensive market analysis completed in 2018 that identified multiple routes in and around the Washington, D.C. region that could operate today without a government operating subsidy (funded by farebox recovery). The longest route, with the highest number of single occupancy vehicles taken off the road, is service between the Occoquan Harbour Marina (North Woodbridge) and Joint Base Anacostia-Bolling (JBAB). Immediately adjacent to JBAB is the new US Department of Homeland Security (DHS) employment campus. Together, these sites will have 35,000 employees at full build-out. JBAB today employs 17,000 employees. The DHS site today is home to the US Coast Guard, with employees starting as early as 4:30am daily.

This origin-destination pair has a significant commuter market in or near North Woodbridge: The study identified 5,195 homebased AM trips from Occoquan Harbour Marina to JBAB, DHS, The Wharf, Washington Harbor and The Yards/Diamond Teague; JBAB/DHS account for 3,522 of these.

Further, this destination is not directly served by other transit services, such as Metro, OmniRide or VRE. The only transit option is a shuttle from the L'Enfant Metro station. In today's traffic patterns, this pair (OCQ-JBAB/DHS) has an average drive-time of 90-minutes with a very high SOV mode share. In Stakeholder Group ferry demonstration projects, this route was completed in under an hour, including boarding and de-boarding times. This route also has the support from local elected leadership and private sector representatives in the region. JBAB and DHS are members of the Stakeholder Group and are supportive of future service.

Responses should include the following assumptions and indicate the respondent's ability to meet these assumptions. Respondents are encouraged to provide further comment on the feasibility of the assumptions based on their experience.

- Operators would provide (or operate on behalf of the governance structure) certified vessels that provide the desired transit experience for commuters, are operated by U.S. Coast Guard-licensed crew, and meet all applicable State and Federal regulations for passenger and freight (if applicable) ferry operation.
- Conceptually, operators would commit to maintaining service for a minimum of three to five years with performance-based renewal options.
- Operators would be responsible for entering into agreements with appropriate parties for the use of docks, parking, and vessel maintenance. Private sector efforts are on-going to identify an appropriate site for a vessel maintenance yard on the Occoquan or Potomac Rivers.

b. Public-Private Partnership

For the purpose of this RFI it is assumed that ferry operators will be partnering with, and supported by, a public entity(ies). For security reasons, the Department of Defense and Department of Homeland Security will maintain control and operate all shoreside infrastructure and connecting transit shuttles at their facilities will enter into an agreement for the use of the existing dock at the military installation for ferry service. As envisioned, passengers will enter and exit the vessels at the JBAB-operated marina. Passengers then would take a shuttle bus to get to their final destinations on the two facilities.

The dock at Occoquan Harbour Marina in North Woodbridge is privately owned and operated. The infrastructure upgrades needed to support ferry service could be publicly or privately financed and could require a public-private agreement for ferry operators servicing the dock. Among the studies completed by the Stakeholder Group is an Infrastructure Gap Analysis detailing the dock and parking needs at both sites. Efforts are underway to secure federal grant funding to help underwrite the necessary capital.

The Stakeholder Group, and the public-sector representatives, will continue to remain an active partner in ferry service through planning, securing public funding, land use and permit approvals, and transit connections, e.g., airport, Metrorail, commuter rail, etc.

It should be noted that no direct public subsidy for passenger fares is being proposed at this time, however, this market has a built-in subsidy in the form of employer-funded transit benefits. The Federal government and any organization in Washington D.C. with more than 20 employees are required to provide commuter transit benefits. The IRS allows employers to provide tax-exempt Qualified Transportation Fringe benefits of up to \$260 per month, per employee. For JBAB/DHS passengers, among others, this translates to riders defraying their costs with an approximate subsidy of \$6 one way, \$12 round trip each day. Responses to this RFI may include comments on the feasibility of this approach, including a high-level budget, operational plan, and recommended direct-operator subsidy amount.

c. Market Driven Expansion

The route from Woodbridge to JBAB/DHS in Southwest D.C. is one of six corridors identified in the market analysis as having a market size - and travel time savings - to support ferry service. In total, 67 corridors have been studied in the National Capital Region. Given several recent developments on the waterfront in this corridor, including Amazon's decision to locate HQ2 at National Landing (within walking distance to National Airport via a future pedestrian bridge), are creating emerging markets that have the potential to expand and sustain ferry service routes in the region.

Additionally, there are several opportunities to support tourism and recreational excursions on the water. Four new water taxis and several existing vessels provide dinner, brunch, and sightseeing cruises in Washington, D.C.; Alexandria, Virginia; and National Harbor/MGM Hotel, in Maryland. These transportation providers serve approximately 1 million individuals annually. Extending ferry service to off-peak and weekend schedules to provide tourism and leisure excursions to additional corridors would provide a high-demand service and increase operator revenue.

Furthermore, disruption of public transit, as well as the construction or expansion of major road and/or railway projects, can create temporary increased market demands for

ferry service, along with public funding opportunities. Recently, renovation of Metrorail platforms south of National Airport closed six stations for several months. In response, the City of Alexandria temporarily subsidized commuter use of existing water taxi service during AM and PM peak travel times. The subsidy provided a \$8 reimbursement on a \$10 round trip fare between Alexandria, National Harbor, and the Wharf.

d. Transit Connectivity

Fast ferry service should be fully integrated into the region's existing transit system to ensure widespread use. The Occoquan Harbour Marina is located within the proposed "transit triangle" in North Woodbridge. The triangle includes the Woodbridge VRE train station and the Interstate 95 Commuter Bus/Slug Parking Lot (580 parking spaces within walking distance of the Occoquan Harbour Marina). The Occoquan Marina is planned to be the third point in the triangle and ensure a high degree of consistency and connectivity to other transit operations, year-round. Planned shuttle services in the triangle will ensure the ferry commute trip is convenient for riders on a "door-to-door" basis rather than just "dock-to-dock."

The North Woodbridge Small Area Plan, unanimously approved by the Board of County Supervisors on October 8, 2019, supports the development of over 9,000 new residential units and several million square feet of commercial floor area, including hotels, office buildings, retail, restaurants, mixed-use sites and park/open space within and adjacent to the transit triangle. This will substantially expand the passenger ferry market within the walkability zone (See Appendix Figures 10-11).

III. Background

a. Driving Factors

Establishing a commuter fast ferry service has gained widespread support in the region due to the following factors:

Traffic Congestion - Eastern Prince William to Washington, D.C. is the most congested traffic corridor in the nation. The average AM commute time for the 29- mile drive is 90 minutes. The increased capacity of I-95 has not significantly reduced traffic congestion because of the high latent transit demand.

Population Growth - Metropolitan Washington Council of Governments (MWCOG) projects 1.5 million additional residents in the region over the next 30 years. Over eight percent of that growth will occur in Prince William County, with a 37 percent increase in households. A Stephen S. Fuller Institute report estimates that 6 percent of employees from the new Amazon Headquarters will live in Prince William, resulting in an additional 5,100 households. Prince William County Planning projects that at full build-out, North Woodbridge, the area immediately adjacent to Occoquan Harbour Marina, will have a population of nearly 30,000.

Travel Demand Corridor Service Gap - The market analysis identified a travel demand corridor between Woodbridge and Southwest D.C. due to the large number of Eastern Prince William residents employed by the US Navy, Air Force, Coast Guard, and Department of Homeland Security, particularly operating out of Joint Base Anacostia-Bolling (JBAB) and DHS. Neither VRE nor OmniRide serve JBAB or DHS. An estimated 75 percent of JBAB commuters are Single Occupancy Vehicles.

Emergency Preparedness - Emergencies in the National Capital Region often cause traffic gridlock that could be lessened with a fleet of fast ferry vessels on the region's river system. Vessels can be used to quickly transport first responders and their equipment and/or rescue accident victims.

Commercial Growth - Waterfront development in the region is a driving force behind local economic growth. The M-495 Fast Ferry Stakeholder group recognizes the need to work with the public and private sectors to achieve their economic and land use visions.

b. Project Partners

Since 2010, nearly 40 organizations have comprised the M-495 Commuter Fast Ferry Stakeholder Group, which has raised its own funds for studies; applied for - and been awarded - government grants; hired and overseen consultants; and handled marketing. The group sponsored three Fast Ferry Summits (D.C., Maryland, and Virginia) in 2017-2018, with over 500 participants, including members of the public, private and military sectors, along with area residents supportive of commuter Fast Ferry. The Stakeholder Group is comprised of the following organizations:

Federal Government

U.S. Maritime Administration
Federal Transit Authority
Federal Highway Administration
Naval District Washington (NDW)
Joint Base Anacostia-Bolling (JBAB)
Department of Homeland Security
National Park Service

State/Local Governments

U.S. Army Corps of Engineers
U.S. Fish & Wildlife Service

Private Industry

Georgetown Business Improvement District
Peterson Company
MGM & National Harbor
The Wharf
Entertainment Cruises
Metal Shark Boats
Passenger Vessel Association
Bush Construction Corporation
Belmont Bay Marina
Occoquan Marina
National Ferry Corporation

Regional Organizations

Metropolitan Washington Airport Authority
National Capital Planning Commission
Metro Washington Council of Governments
Northern Virginia Regional Commission
PRTC/OmniRide
Greater Washington Clean Cities Coalition

D.C. Water
D.C. City Council
D.C. Department of Transportation

Virginia Department of Transportation
Virginia Department of Rail and Public Transit
Arlington County Department of Planning
Fairfax County Planning Department
PWC Department of Planning & Transportation
Maryland Department of Transportation
Prince Georges County, Maryland
Town of Indian Head, Maryland
Charles County Economic Development

The Stakeholder Group is administered by the Northern Virginia Regional Commission (NVRC), a regional council of 14 member local governments in the Northern Virginia suburbs of Washington, D.C. According to Virginia’s Regional Cooperation Act, NVRC is a political subdivision (a government agency) within the Commonwealth. NVRC’s chief role and functions have focused on providing information, performing professional and technical services for its members, and serving as a mechanism for regional coordination. Current programs and projects address a wide array of local government interests.

The Potomac and Rappahannock Transportation Commission (PRTC), operating service as OmniRide, is a multi-jurisdictional agency representing Prince William, Stafford and Spotsylvania Counties and the Cities of Manassas, Manassas Park, and Fredericksburg. OmniRide is qualified to accept State and Federal funding for transportation project

activities and engage in the planning of commuter ferry as part of its strategic plan to support the transportation system's sustainability and growth.

c. Fast Ferry Studies

The feasibility of ferry service on the Potomac River and its tributaries has been the topic of studies since 1999, due to a desire to determine whether sufficient demand exists for service and how that service might provide relief to congestion during various interchange and bridge reconstructions. The recent studies analyzed technical and financial feasibility of operations, followed by an effort to quantify the characteristics of potential service markets, infrastructure, and more accurately define feasible and sustainable service model alternatives.

Subsequent sections summarize highlights and key findings from major studies on commuter ferry service on M-495.

2001 VDOT Ferry Feasibility Study

VDOT conducted a study "to determine the feasibility of operating a high-speed passenger ferry boat service on the Potomac River" (VDOT, 2000). The study concluded that service was feasible and recommended that VDOT facilitate and support implementation of a service to be operated by the private sector. The study recommended a route from Woodbridge to the Navy Yard for initial operation and a ferry service plan was developed that featured a 45-minute one-way travel time, 27 mph average speed and 12 daily trips.

2009 Potomac River Commuter Ferry Feasibility Study and Route RPE Results

Based on VDOT study results, Prince William County financed a study to further explore the feasibility of ferry service and conduct a route proving exercise. The study finds that a Potomac River commuter ferry service from Occoquan Harbour Marina to Washington D.C. has the potential to be competitive with other transit options and would not have negative impacts associated with noise and wake.

2015 NVRC Market Analysis Report

Funded by members of the M-495 Commuter Fast Ferry stakeholder group, the study assessed 260 terminal combinations and identified six corridors as being able to host a financially sustainable market for commuter ferry service due to market size and travel time savings. Additionally, the analysis concluded that the corridors had potential to

improve access to military installations and expand the tourism market beyond traditional D.C. boundaries.

2018 Infrastructure Gap Analysis

The analysis found that the commuter market from Woodbridge to Joint Base Anacostia Bolling and the Department of Homeland Security Headquarters realizes the greatest benefit based on time savings and is commercially viable, reinforcing earlier findings suggesting it as the origin terminal from which to launch service. The study identifies the terminal site development needs and suggests the creation of a business plan as the next step towards implementation.

2019 Urban Land Institute Technical Assistance Panel

The Urban Land Institute convened a panel of experts to develop a set of recommendations for implementing and sustaining a successful fast ferry service in North Woodbridge, and for integrating the transit node into mixed-use development called for in the Small Area Plan (SAP). Recommendations include leveraging the waterfront with a retail spine leading from the town center to the dock and establishing a Business Improvement District to support infrastructure.

2019 North Woodbridge Small Area Plan

Part of Prince William County's Comprehensive Plan, the North Woodbridge SAP provides a vision and implementation strategy for planning, design and economic development of the area around Occoquan Harbour Marina. The SAP identifies ferry as part of a multi-modal transit system to support the proposed urban density.

IV. Project Details

a. Route Schedule

Vessels should run Monday through Friday year-round. The AM peak commute for the JBAB/DHS market is 5am to 8am and the PM peak commute runs from 3pm to 7pm. A noontime ferry service would provide flexibility to the market and should be included in the assumed schedule.

A communications protocol must be established to communicate any suspension of ferry service due to weather conditions, e.g., ice on the Potomac River, or federal holidays. It should be noted that navigational hazards occur on a frequent basis on the Potomac. These include flood events that fill the river with floating debris, and wintertime ice events where ice flows are in the river.

Off-peak commute hours and weekends provide opportunities for additional routes to points of interest in the region; including Alexandria, The Wharf, Georgetown, National Harbor/MGM, Washington Nationals Baseball Stadium and the new Audi Field, home to the D.C. United soccer team.

Previous modeling suggests an approximate 45-minute route run time, not including on-boarding/off-boarding. The 2018 market analysis revealed strong time sensitivity in the market and suggests increasing vessel speeds to realize the time savings. This route includes two wake zones to overcome.

b. Shoreside Infrastructure

Occoquan Harbour Marina

The site of the Woodbridge landing is adjacent to the Occoquan Harbour Marina. The Occoquan River is a small tidal tributary to the Potomac River, with its headwaters near Manassas, Virginia. Navigation begins on the Occoquan where the Highway 123 bridge spans the river. Approximately one nautical mile downriver from Occoquan is the Occoquan Harbour Marina. It is sited between two highway bridges that span the river: Interstate 95 and Route 1.

A chart of the river shows its main channel just to the east of the proposed terminal location, with water depths of 11 to 14 ft. The Infrastructure Gap Analysis recommended that a terminal be located on the property on the northeast corner side of the marina property. The terminal will consist of a steel float with basic dimensions of approximately 20 feet by 250 feet. The float is envisioned to be captured by 12 or more steel pipe piles. The catamaran ferry will lay alongside with a freeboard of approximately five to six feet. See Figures 4-5 in the Appendix for proposed ferry terminal design and location.

JBAB/DHS

The docking terminal at Joint Base Anacostia Bolling and Department of Homeland Security campus will be located on the north side of the yacht basin entrance (see Figures 6-7 of Appendix). The terminal would consist of a steel float with basic dimensions of approximately 35 feet by 60 feet. The float will be captured by two to four steel pipe piles. A trash/ice deflector will be installed on the upstream side of the float for protection of the float. The float will be oriented for use by a bow-loading catamaran ferry with a freeboard of approximately 5 to 6 feet.

c. Parking and Transit Connection

Occoquan Harbour Marina

The parking lot abutting the dock is shared between the marina, event center and restaurant. An option to lease up to 70 parking spaces at the dock site is available. Under a proffer agreement, the Rivergate development located adjacent to the dock site will be providing a shuttle service that will provide transportation from the Occoquan Marina to the Woodbridge VRE Station, commuter parking lot(s), commuter bus stop(s) and other points of interest in North Woodbridge. The parcel of land located immediately north of the proposed ferry terminal is currently available for the development of between 250+ surface and 1,200+ structured parking spaces.

JBAB/DHS

JBAB and DHS both operate and maintain an internal shuttle service on their campuses and intend to expand the routes to serve employees commuting by ferry. Internal shuttle services on JBAB and DHS will maintain the high security requirements of the facilities and will be available only to individuals with Common Access Card (CAC) identification. Parking is limited, with one spot for every three employees. Given these constraints, DHS and JBAB encourage employees to utilize public transit options, including commuter ferry when it becomes available, and are agreeable to making necessary changes to internal connecting transit services to support employee use of public transit.

Additional public-sector support for shoreside infrastructure and connecting transit may be financed through capital infrastructure funding sources available to the public sector.

d. Fares

Based on the results of the market analysis, the proposed route is commercially viable. Additionally, operator revenue can be supplemented by off-peak and weekend recreational and tourism excursions.

Employees of the federal government and D.C.-based employers constitute the bulk of the market and will have their fares subsidized via employer-funded commuter transit benefits. The subsidy translates to approximately \$6 one way/\$12 round trip; significantly reducing out of pocket costs of fares for riders and keeping market demand high.

While no additional public subsidies are being proposed at this time, operators are invited to submit a budget and operational plan that includes a direct public subsidy to the operator or management fee, in addition to the requested budget and operational plan.

V. Submission Requirements

Responses to this RFI shall include the following information, formatted in sections as described below. Information contained in responses are considered to be part of the public record and any proprietary or protected information should be clearly labeled as such.

a. Organizational Description

- A general description of the organization; including key persons and partners or other organizations who will be supporting operations.
- A description of the organization's ferry operating experience.
- Examples of past and/or current projects.
- The name and contact information, to include mailing address, telephone number, and email address, for the respondent's authorized point of contact for this RFI.

b. Operational Plan

- Specifications of possible ferry vessels; including passenger capacity, cruising speed, wake characteristics and amenities.
- Route Schedule; including route travel times, departure/arrival times, frequency of service.
- Embarking/disembarking process for passengers.
- Fare prices and fare collection/ticket distribution process.
- Staffing plan; including back of house staff for administration/ticketing.
- Key service measures and process for tracking/analyzing performance data.
- Passenger communications protocol for regular communications and service disruptions.
- Issues that could be expected to arise in establishing this new service.

c. Operational Timeline

- Detailed timeline for service implementation; including purchasing or building vessels, date of launch and any proposed addition of routes or off-peak excursions. Timeline to be expressed in months from a theoretical Notice to Proceed.

d. Operational Budget Plan

- Approximate financial plan that covers at least a three-year period and preferably includes both a numerical and narrative financial plan; including any assumptions that are key to the financial underpinning of such a project.
- Assumed fare levels necessary to sustain the financial health of the service.

- Possible services that provide supplemental revenue, e.g., concessions, excursions, should be included in the budget.
- Feedback on potential need for a direct operator subsidy or management fee, including proposed amount.
- Financing options for vessels.

e. Marketing Plan

- Recommended plan to market service based on best practices and operator experience; to include messaging and marketing materials used by operator for existing service.

Questions and responses should be sent in electronic format and e-mailed to:

Mr. Chuck Steigerwald
Director of Strategic Planning
Potomac and Rappahannock Transportation Commission
csteigerwald@omniride.com
Subject Line: M-495 Fast Ferry

VI. Appendix

Figure 1. Study and Market Map Area

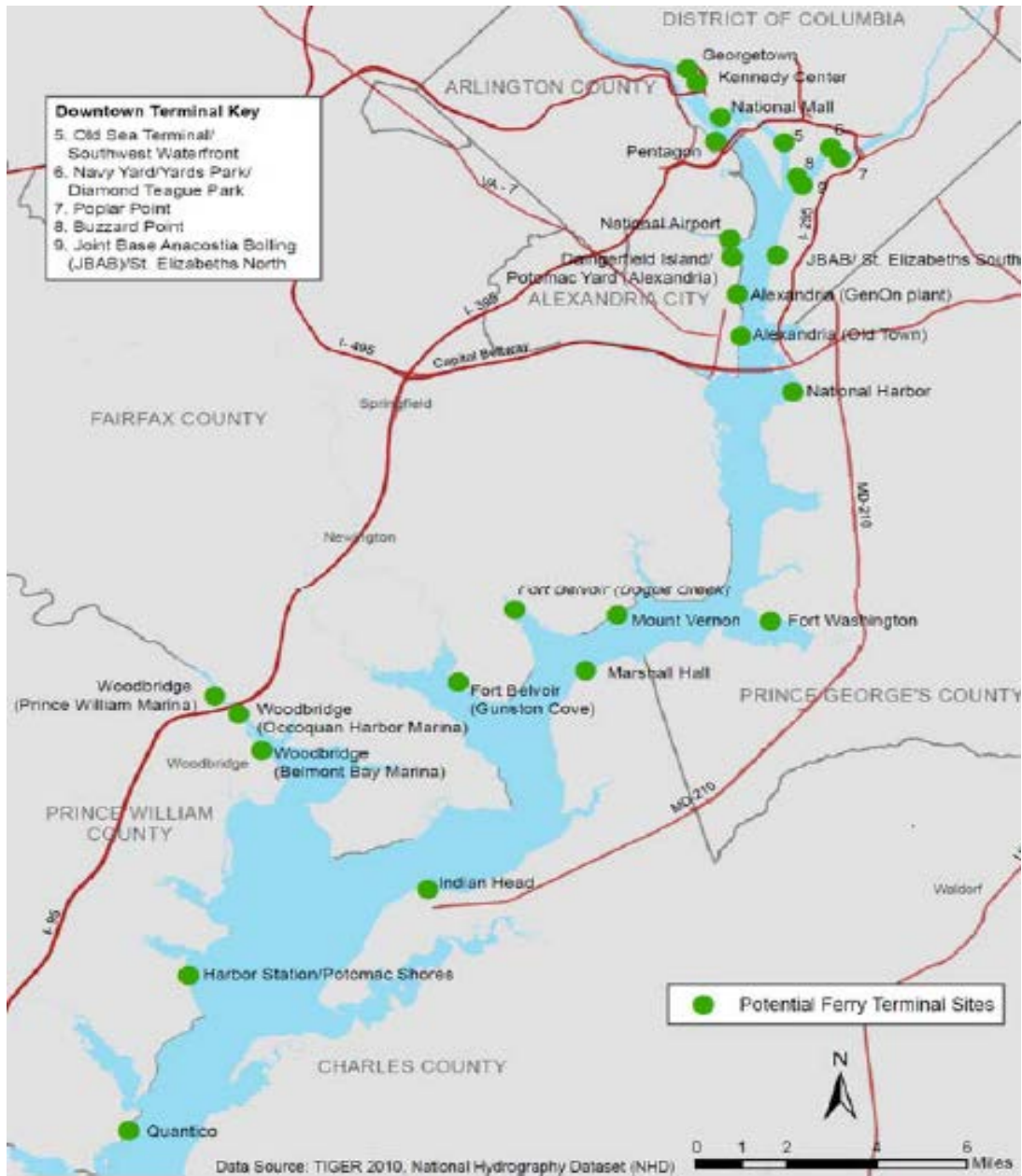
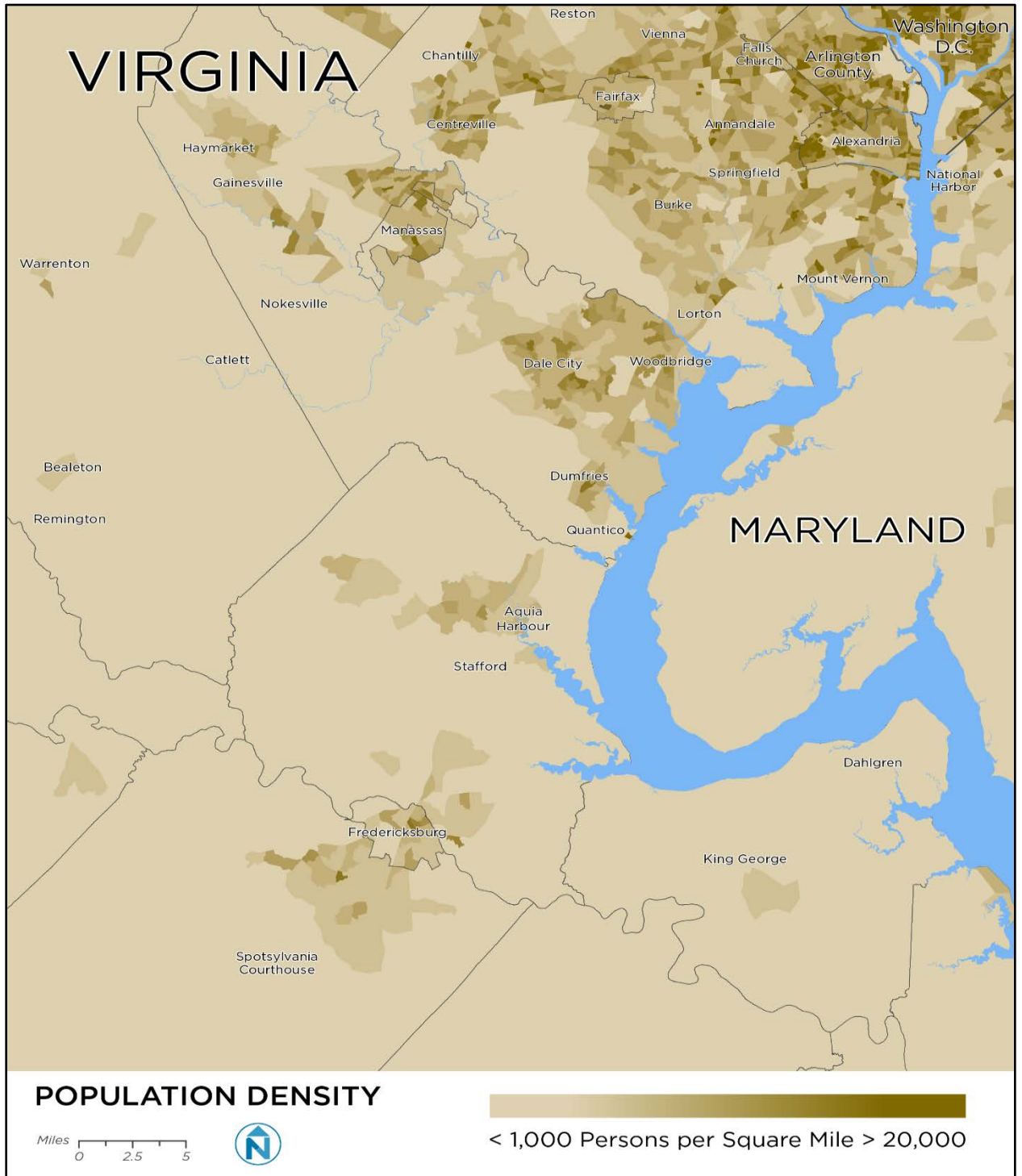


Figure 2: Metropolitan Washington Region Population Density



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Figure 3: Regional Employment Density

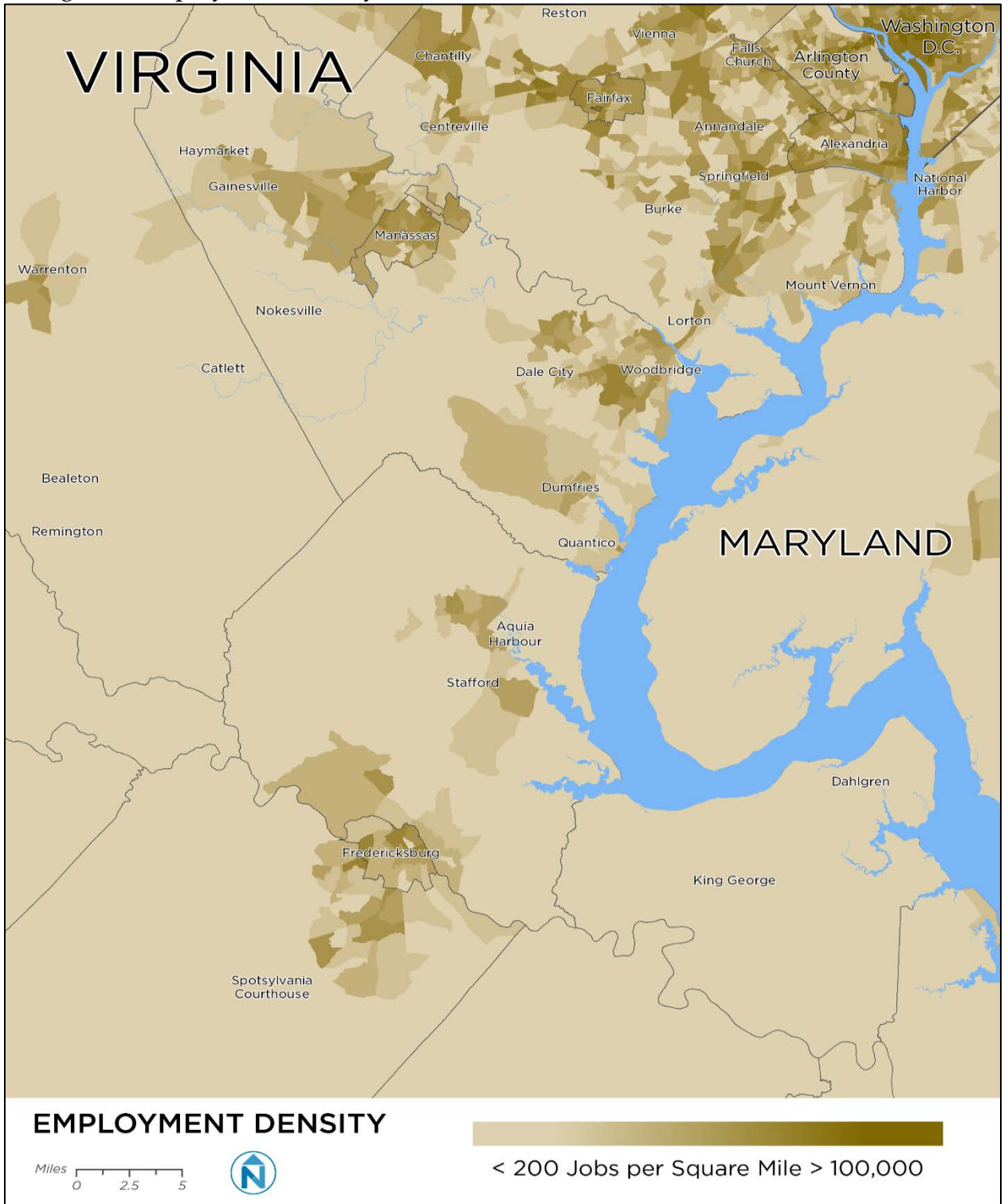


Table 1: Regional Population Trends

Location	2010 ¹	2013 Estimate ²	2016 Estimate ³	Change 2010-2016
City of Alexandria	139,966	143,684	151,473	8.2 percent
Fairfax County	1,081,726	1,101,071	1,132,887	4.7 percent
Prince William County	402,002	416,668	443,630	10.4 percent
Stafford County	128,961	131,885	139,548	8.2 percent
City of Fredericksburg	24,286	25,931	27,853	14.7 percent
Washington-Arlington-Alexandria Metro Area	5,582,170	5,759,330	6,011,752	7.7 percent

Table 2: Regional Employment Trends

Location	2010 ⁴	2015 ⁵	Change 2010-2016
Washington, D.C.	621,524	677,094	8.9 percent
Arlington County	134,414	151,123	12.4 percent
National Harbor, MD	2,776	4,858	75.0 percent
Washington-Arlington-Alexandria Metro Area	2,797,061	2,955,571	5.7 percent

¹ U.S. Census Bureau, 2010 Source File 1

² U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates

³ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

⁴ U.S.Census Bureau, Center for Economic Studies, 2010 Work Area Profile Analysis

⁵ U.S.Census Bureau, Center for Economic Studies, 2015 Work Area Profile Analysis

Figure 4: Occoquan Harbour Marina Location



Figure 5: Occoquan Harbour Marina Proposed Ferry Landing

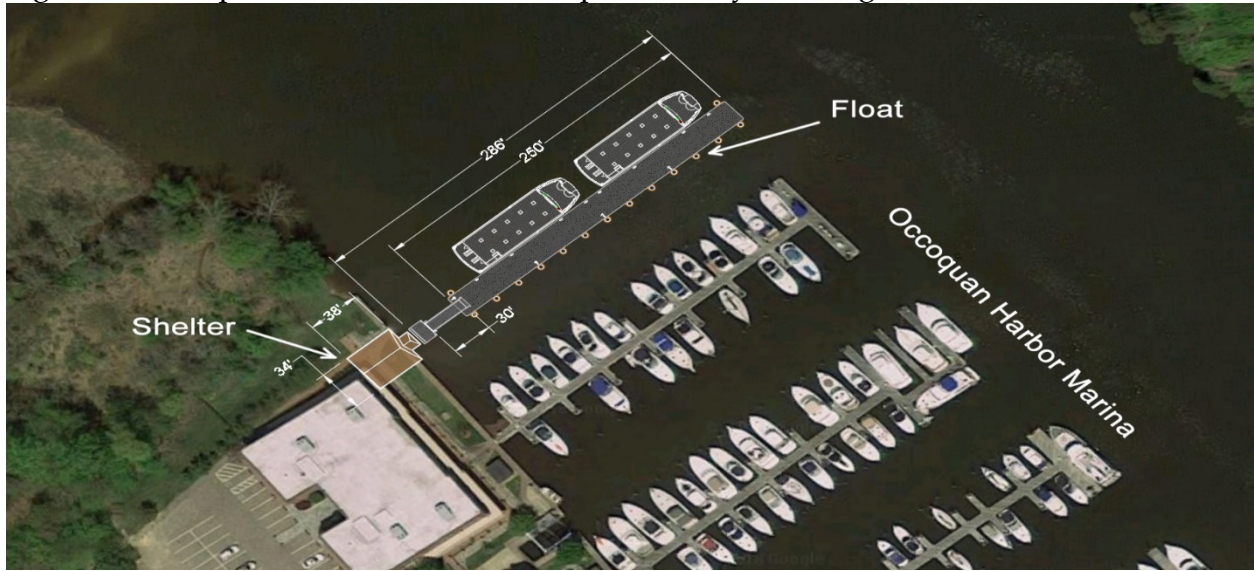


Figure 6: JBAB/DHS Proposed Ferry Landing Location

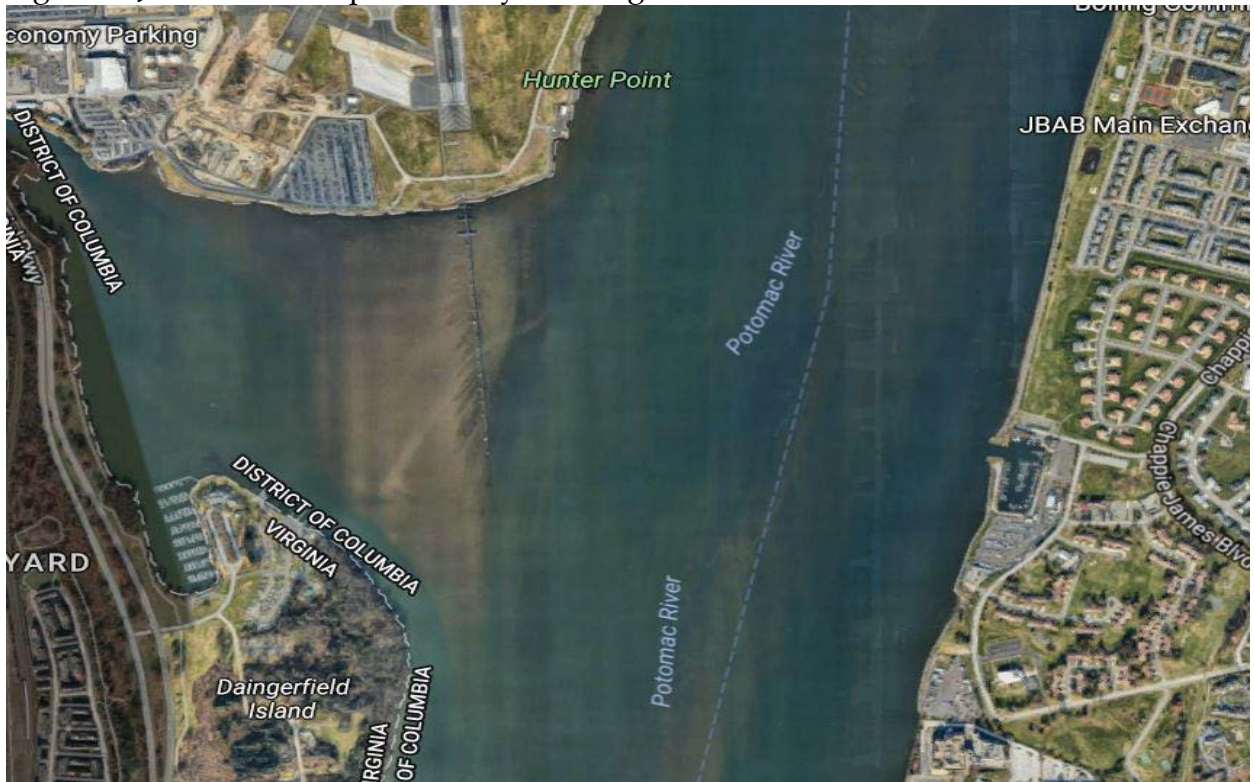


Figure 7: JBAB/DHS Proposed Ferry Landing

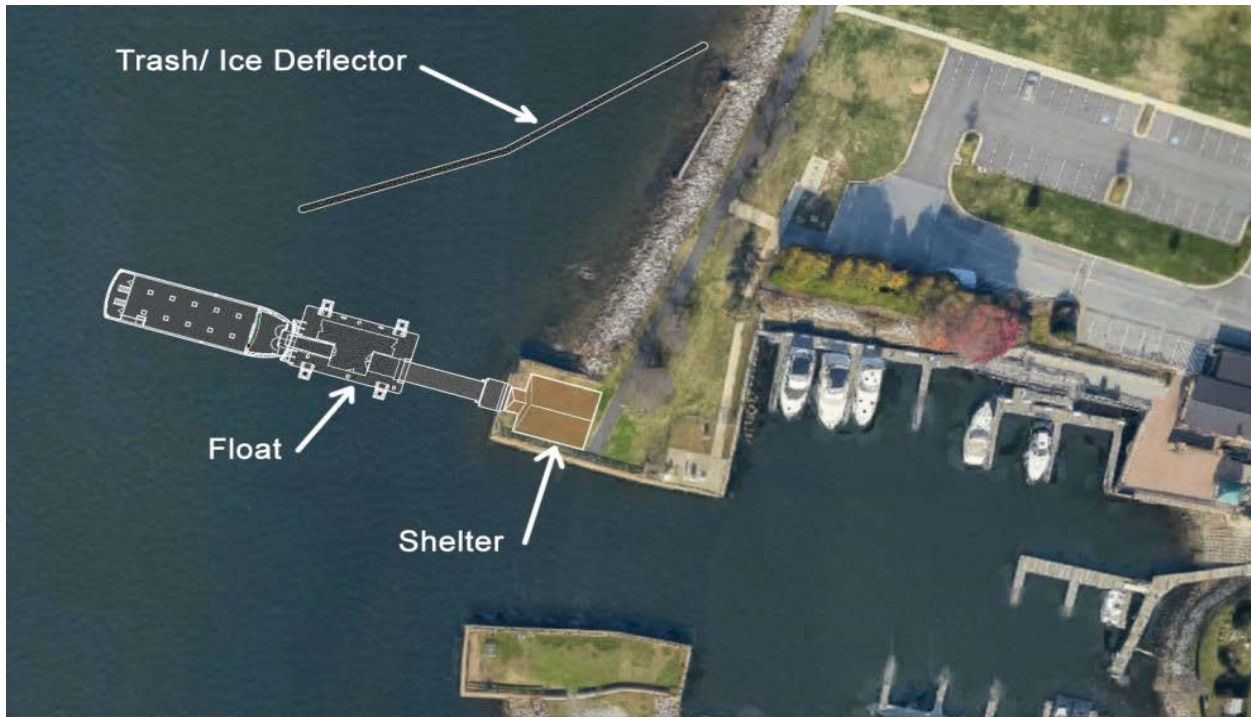


Figure 8: AM Home-Based Work Trips to Ferry Terminal Catchment Areas

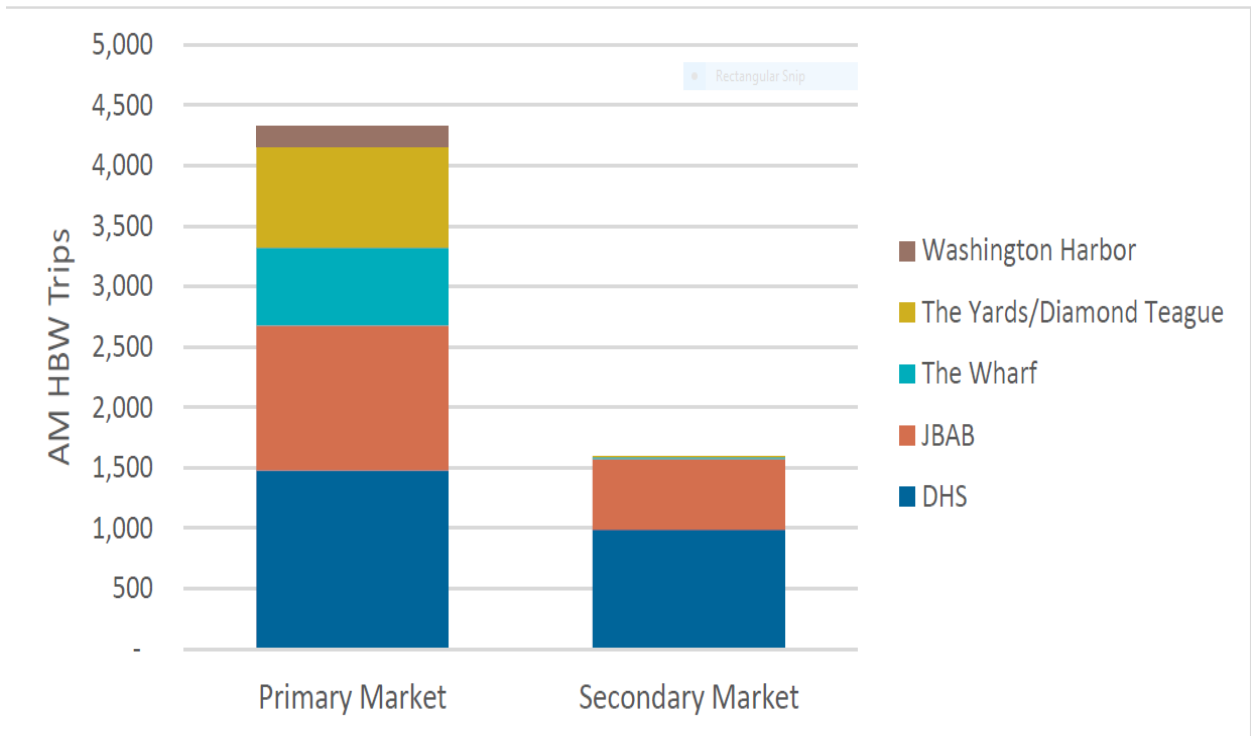


Figure 9: AM Driving Commutes Longer Than Optimum Ferry Travel Time

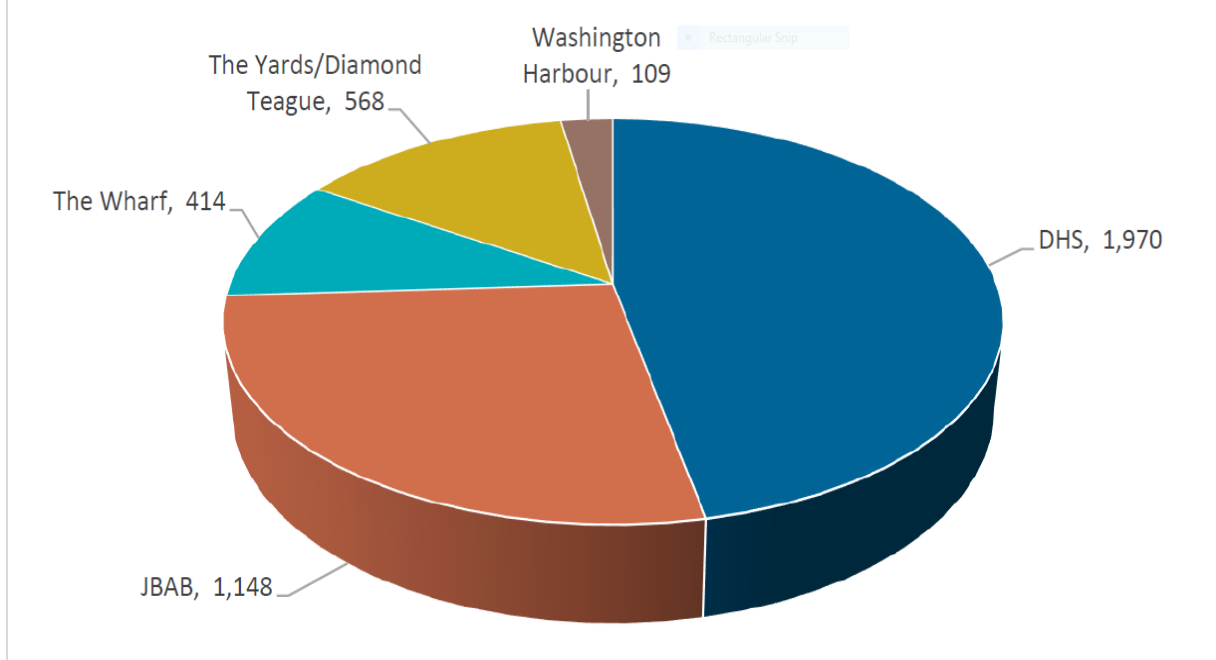


Table 3: Average Private Vehicle In-vehicle Travel Time, AM Peak

Ferry Terminal	Primary Market		Secondary Market	
	Average In-Vehicle Time (min)	Average Distance (miles)	Average In-Vehicle Time (min)	Average Distance (miles)
DHS	91.1	32.6	138.3	56.8
JBAB	84.4	29.5		
The Wharf	93.1	28.4	149.2	57.2
The Yards/Diamond Teague Park	98.9	31.3	139.9	53.7
Washington Harbor	92.9	28.5		

Table 4: One-Way Travel Time and Expenses from Woodbridge to DHS Campus

	In-vehicle Time (min)	Transit Fare or Approved Mileage Reimbursement	Tolls, Parking Expenses	Total One-way Travel Cost
Drive Alone	80	IRS mileage: \$14.40	Parking: \$4.45 Toll \$0	\$18.85
Carpool	80	IRS mileage: \$7.20	Parking: \$2.23 Toll: \$0	\$9.43
Bus/Metro	75 to 95	Bus fare: \$9.20 Metro fare: \$2.00 IRS mileage: \$4.01	Park & Ride: \$0	\$15.21
VRE/Metro	107	VRE Zones 1 to 5 ticket: \$8.22 IRS mileage: \$2.05	Park & Ride: \$0	\$10.05
Amtrak/Metro	107	Amtrak ticket: \$21.00 Metro fare: \$2.00 IRS mileage: \$2.05	Park & Ride: \$0	\$24.05

Figure 10: North Woodbridge Planned Transit Walksheds

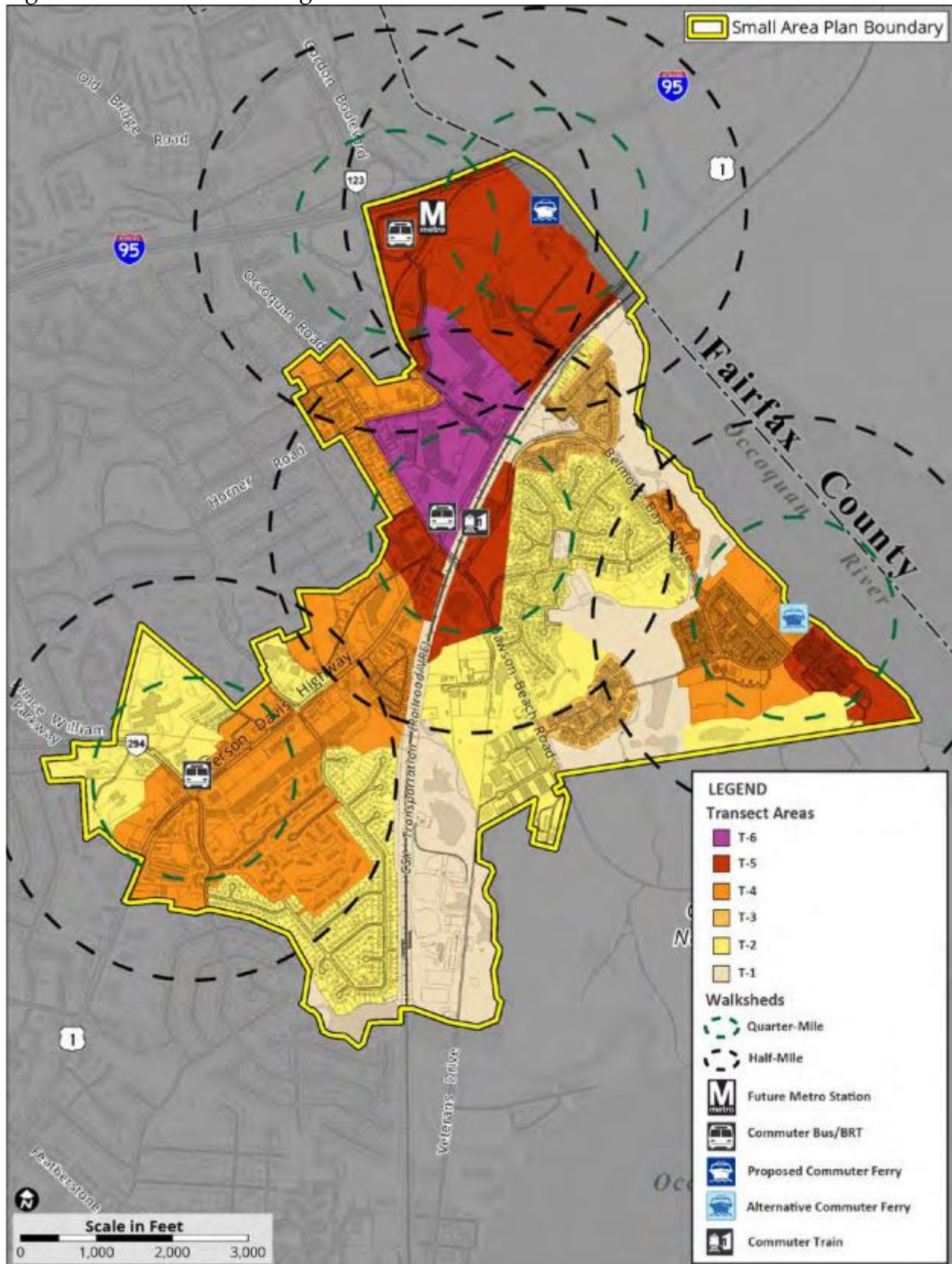


Figure 11: North Woodbridge Planned Town Center



Figure 12: North Woodbridge Planned Mobility Network

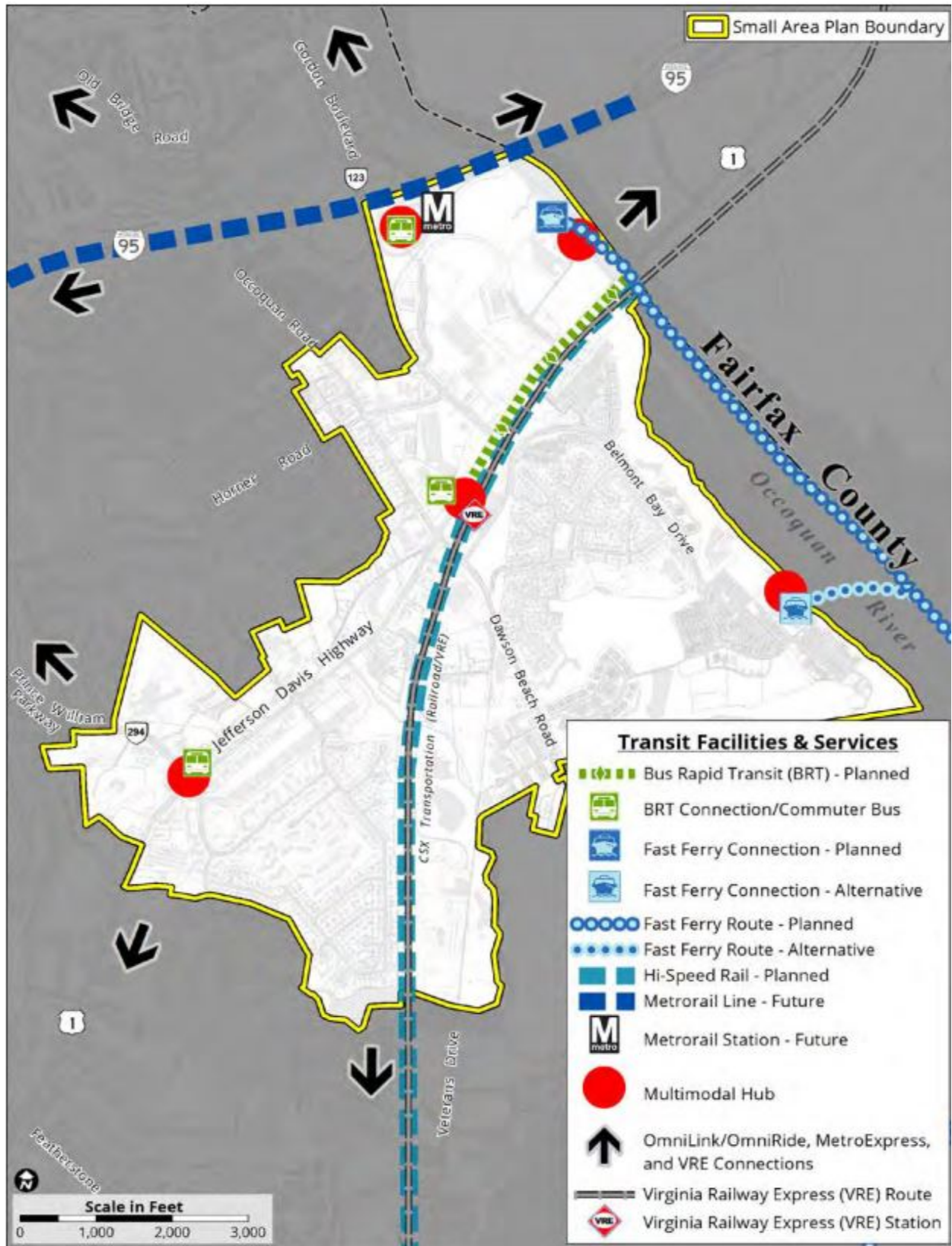
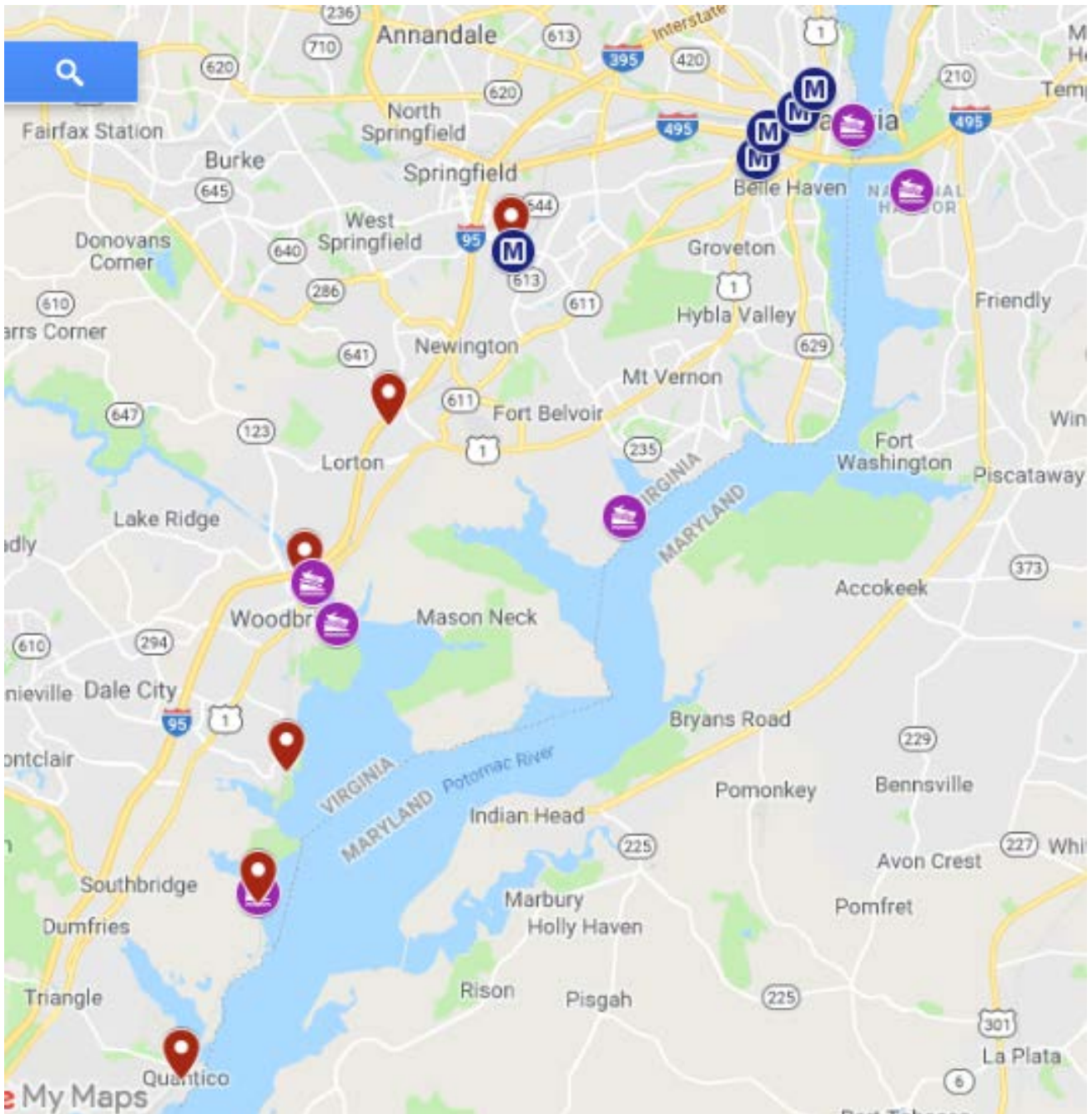


Figure 13: Fast Ferry Routes & Existing Commuter Rail: D.C. Metro Region



Key:

- Red – Virginia Railway Express (VRE)
- Blue – Metro
- Purple – Potential Fast Ferry O/D Points

Additional Resources

Completed Ferry Studies

<http://NewWoodbridge.org/fastferry/>

North Woodbridge Small Area Plan (Draft)

http://eservice.pwcgov.org/planning/documents/NorthWoodbridgeSAP/NorthWoodbridgeSAP_DRAFT.pdf

Northern Virginia Demographics

<https://www.novaregion.org/118/Demographics>

Northern Virginia Regional Commission Open Data Portal

<https://www.novaregion.org/1387/Open-Data-Portal>

United States Census Bureau Data Prince William County

<https://www.census.gov/quickfacts/fact/table/princewilliamcountyvirginia/PST045218>